

REMARKS

Claims 4-13, 15-40 and 52 are pending.

Claims 4-8 and 20-24 have been amended to recite that the substrate layer and the skin layer are co-extruded simultaneously using a multilayer extrusion molding machine. Support for this amendment can be found on page 81, line 13 to page 82, line 1 of the specification. No new matter has been added by way of the above-amendment.

Prior Art Based Issues

Claims 4-13 and 15-40 remain rejected and newly added claim 52 stands newly rejected under 35 U.S.C. § 103(a) as being unpatentable over EP 974 617 (EP'617) in view of EP 976 782 (EP'782). Applicants respectfully traverse the rejection.

In the October 31, 2005 Amendment, Applicants argued that the specification contains evidence of unexpected results which overcome the finding of obviousness. In fact, beginning at page 3, line 12 of the outstanding Office Action, the Examiner agrees that Applicants have shown that there are superior properties in the inventive laminate having a foamed core and a skin layer over the properties of the laminate of EP '617 having a solid core and a skin layer. However, the Examiner finds that the improvement is not unexpected. Accordingly, the Examiner has taken the position that Applicants showing of improved properties does not overcome the *prima facie* case of obviousness.

In support of this position, the Examiner cites three patents: a) Chaudhary et al., US 6,160,029, (hereinafter "US'029"); b) McDermott et al., US 5,120,587 (hereinafter "US'587"); and c) Hofmann, US 3,929,026 (hereinafter "US'026").

Applicants have reviewed these references and disagree with the Examiner that these references teach that there would be improved properties by modifying a laminate having a skin and solid core by replacing the solid core with a foamed core.

With respect to Chaudhary et al., the Examiner cites this reference for teaching that a "foam with a skin has shown an improved softness and better resistance to abrasion." See page 4 of the Office Action. Whether this is a valid description of Chaudhary et al. does not matter, since the point is irrelevant to Applicants' showing. The improvements that Applicants have shown are based on the following difference in structure:

Structure of Laminate of EP '617	Structure of Inventive Laminate
Skin Layer	Skin Layer
Solid Core	Foamed Core

The improvements that Chaudhary et al. teach are based on the following difference in structure:

Structure of Product in Prior Art cited by Chaudhary et al.	Structure of Chaudhary et al's Laminate
Foamed Core	Skin Layer
	Foamed Core

Thus, the basis for improvement is different from that argued by Applicants and as such the teachings of Chaudhary et al. are not relevant to the issue of unexpected results.

Furthermore, the Examiner misunderstands that the "skin" as described by Chaudhary et al. is self forming skin and it is not a separate layer formed of material which is different than the foamed core as in the laminate of the present invention.

Accordingly, at no place within the teachings of Chaudhary et al. is there a description that modifying a laminate having a skin layer and a solid core by replacing the solid core with a foamed core would provide improved properties, as was first described by the present inventors. As such, Chaudhary et al. cannot be used to show that the improved properties of the present invention are not unexpected.

With respect to McDermott et al., the Examiner cites this reference for showing that “when the cushions are placed underneath the carpets, the wear and the tear on the carpet is improved.” See page 4, lines 11-12 of the outstanding Office Action. After careful consideration of McDermott et al., Applicants are unclear as to how the Examiner has found that McDermott et al. is relevant to the instant facts. It appears that the Examiner is relying upon the following disclosure:

When laying down wall-to-wall carpeting, or when placing an area rug on the floor or over other carpeting, pads and cushions are often placed beneath the rugs or carpets to improve the wear and tear on the carpet or rug. (See column 1, lines 14-17 of McDermott et al.)

It is Applicants' opinion that the Examiner's position is not proper. Again, the improvements that McDermott et al. teach are based on the following difference in structure:

Structure of Product in Prior Art cited by McDermott et al.	Structure of McDermott et al's Laminate
Rug or Carpet	Rug or Carpet
	Pad or Cushion

The Examiner appears to be equating the carpet with the inventive skin layer of the laminate and the pads or cushions with the inventive foam layer of the laminate. However, this comparison is irrelevant to Applicants' position.

Accordingly, at no place within the teachings of McDermott et al. is there a description that modifying a laminate having a skin layer and a solid core by replacing the solid core with a foamed core would provide improved properties, as was first described by the present inventors. As such, McDermott et al. cannot be used to show that the improved properties of the present invention are not unexpected.

With respect to Hofmann, the Examiner has not shown that there would be improved properties by modifying a laminate having a skin layer and a solid core by replacing the solid core with a foamed core as in the present invention. Again, the improvements that Hofmann teaches are based on the following difference in structure:

Structure of Prior Art Cables or Belts cited by Hofmann	Structure of Hofmann's Cables or Belts
Skin Layer (tie gum)	Skin Layer (self skin layer)
Foamed Core	Foamed Core

In fact at best, Hofmann teaches that the composition of the skin is important for the properties of the foam conveyer belt. At column 1, lines 29-55, Hofmann describes disadvantages of having cables or belts which have a tie gum as the skin layer over the core. Hofmann teaches that improved properties can be found by preparing a foam composition which can have a "self-skinning effect." (See column 2, lines 64 to column 3, line 1.) Accordingly, Hofmann does not teach or fairly suggest that there would be improved properties by modifying a laminate having a skin layer and a solid core by replacing the solid core with a foamed core, as Applicants have shown.

As such, it is Applicants' position that the improved properties remain unexpected despite the teachings of Chaudhary et al., McDermott et al., and Hofmann. The *prima facie* case of obviousness would be overcome by the inventive showing of unexpected results.

In addition, Applicants have amended independent claims 4-8 and 20-24 so as to further distinguish the present invention from the cited references, i.e., claims 4-8 and 20-24 recite that the substrate layer and the skin layer are co-extruded simultaneously using a multilayer extrusion molding machine.

The newly cited patent to Chaudhary et al. mentions skinned foam product having so-called self-formed skin as indicated in column 7, line 16 and in column 22, line 7. In contrast thereto, the foamed laminate according to the present invention is obtained by co-extrusion of the skin layer and the foam layer.

The advantageous inventive effect is clearly disclosed in the examples in the original specification. Specifically, the inventive effect for weather strips can be seen in comparing the inventive examples (each having a foamed core and a thermoplastic resin skin layer) with Comparative Examples 1-1 and 2-1 (each made in a conventional manner by laminating a nylon film skin layer to a soft vinyl chloride resin layer), and the inventive effect for the type of skin layer can be seen in Comparative Examples 3-2 and 3-5. This is in contrast to the patent to Chaudhary et al. which does not disclose any advantageous effect over the product of the technique as shown by the present invention. Moreover, there is in Chaudhary et al. no mention nor suggestion of the co-extrusion of the skin layer and the foam layer as taught by the present invention. Therefore, the inventive effect according to the present invention is not able to be obtained by the teachings of Chaudhary et al..

Furthermore, the Examiner's suggestion as to the "improvement of the wear and the tear on carpet" by placing cushion underneath the carpet mentioned in McDermott et al. has nothing to do with the inventive effect due to co-extrusion of the laminate according to the present invention as verified by experiments as explained above. Also in McDermott et al., there is no mention nor suggestion given to the co-extrusion of the skin layer and the foam layer as taught

by the present invention. Therefore, the inventive effect according to the present invention is not obtained by the teachings of McDermott et al..

The newly cited Hofmann teaches a self-skinned elongated foamed article with longitudinal reinforcing member. In Hofmann, (at column 2, lines 64 et seq.) there is mentioned the possibility of obtaining an article having desired high abrasion, impact and tear resistance characteristics and low temperature performance. However, this is a self-skinned article. Also, there is no mention nor suggestion as to the co-extrusion of the skin layer and the foamed substrate layer as disclosed according to the present invention. Also, Hofmann does not disclose the inventive effect due to the co-extrusion of the laminate according to the present invention verified by experiments as explained above. Therefore, the inventive effect according to the present invention is not obtained by the teachings of Hofmann.

As to combination of the cited references:

In this final Office Action, the Examiner maintains the former rejection reason by combination of EP'617 and EP'782.

For this rejection reason, detailed refutation has been given in our response to the former Office Action in "Applicant's Stand" and, hence, a more short comment is given as follows:

EP'617 teaches a laminate with a skin layer exhibiting better sliding performance for window glass, wherein no mention is made of a foamed substrate layer. EP'782 teaches a technique for producing foamed article using carbon dioxide as the foaming agent, wherein no mention is made for co-extrusion of the skin layer and the foamed substrate layer as taught by the present invention.

Therefore, a person having ordinary skill in the art may not be invited to imagine to combine the teaching of EP'782 with the teaching of EP'617 to reach the foamed laminate of the present invention.

With regard to the newly referenced prior art documents Chaudhary et al. and Hofmann teaching both a foamed article having self-formed skin layer will provide no motivation to anticipate the present invention therefrom even by combining with the teaching of McDermott et al.

As to "Unexpected Results":

According to the present invention, a foamed laminate which permits recycled use and which is superior in the appearance, wear resistance, spongy soft touch and fastness is provided as is explained also in the formerly submitted Declaration, whereas EP'616 and EP'782 do not include any mention or even suggestion for such advantageous inventive effects, so that the present invention giving birth to such unexpected results cannot be anticipated easily by a person skilled in the art by combining the thermoplastic elastomer taught in EP'782 with the skin layer taught in EP'617 even by reference to McDermott et al. From the suggestion by McDermott et al., one may expect that a laminate of thermoplastic elastomer and a skin layer may exhibit softer resilience when the thermoplastic elastomer is replaced by a foamed layer, nevertheless, one may not expect any improvement in the wear resistance and in the soft spongy hand touch of a co-extruded laminate as compared with conventional article prepared by simple lamination of a skin layer with a foamed substrate layer or by simple foaming with self-formed skin layer.

The newly referenced Chaudhary et al. and Hofmann teach a foamed article with self-formed skin layer corresponding to that of Comparative Examples 3-2 and 3-5. In the foamed articles of Comparative Examples 3-2 and 3-5, the skin layer is formed due to surface chilling effect by contact with surrounding cool air. Even when the teaching of McDermott et al. is taken into consideration, one can not expect from the teachings of Chaudhary et al. and Hofmann that a co-extruded laminate of definite composition with definite characteristic features according to the present invention will exhibit the advantageous effects mentioned above.

Conclusion:

As detailed above, the applicant believes that the present invention reveals certainly an inventive novelty over the cited references and is not obvious from them, so that the present invention giving birth to certain unexpected results as mentioned above should be regarded as patentable. Accordingly, withdrawal of the rejection is respectfully requested.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Garth M. Dahlen, Ph.D., Esq. (Reg. No. 43,575) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to our Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under § 1.17; particularly, extension of time fees.

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Respectfully submitted,

By 

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